MC 87-I-20D(P)

PRELIMINARY REPORT
INDUSTRY SERIES

1987 Census of Manufactures

MC87-I-20D(P)
Issued June 1989

GRAIN MILL PRODUCTS

Industries 2041, 2043, 2044, 2045, 2046, 2047, and 2048

INTRODUCTION

This report presents preliminary statistics from the 1987 Census of Manufactures for those establishments classified in the industries listed above. These data will be superseded by a more comprehensive final paperbound report. The method of data collection and use of administrative data are discussed in detail in the appendix.

All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The definitions of these industries are the same as those used in the 1987 Standard Industrial Classification (SIC) Manual.[1]

INDUSTRY 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS

In the 1987 Census of Manufactures, Industry 2041, Flour and Other Grain Mill Products, had employment of 13.3 thousand. The employment figure was 12 percent below the 15.1 thousand reported in 1982. Compared with 1986, employment in 1987 decreased 1 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was $4.8 billion.

In 1987, establishments in this industry accounted for 60 percent of products considered primary to the industry regardless of the industry in which they were produced (coverage ratio). The products primary to this industry appear in table 2 and aggregated to $4.8 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $3.5 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 2043, CEREAL BREAKFAST FOODS

In the 1987 Census of Manufactures, Industry 2043, Cereal Breakfast Foods, had employment of 16.0 thousand. The employment figure was 3 percent above the 15.6 thousand reported in 1982. Compared with 1986, employment in 1987 decreased 2 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was $6.6 billion.

In 1987, establishments in this industry accounted for 98 percent of products considered primary to the industry regardless of the industry in which they were produced (coverage ratio). In 1982, the coverage ratio was 96 percent. The products primary to this industry appear in table 2 and aggregated to $5.1 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $1.7 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 2044, RICE MILLING

In the 1987 Census of Manufactures, Industry 2044, Rice Milling, had employment of 4.4 thousand.

[1]**Standard Industrial Classification Manual: 1987.** For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock No. 041-001-00314-2.

Address inquiries to Bureau of the Census, Industry Division, Washington, DC 20233, or call **Evelyn A. Jordan** (301) 763-2510.

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The total value of shipments for establishments classified in this industry was $1.2 billion.

In 1987, establishments in this industry accounted for 94 percent of products considered primary to the industry regardless of the industry in which they were produced (coverage ratio). The products primary to this industry appear in table 2 and aggregated to $1.3 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $831.6 million in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS

In the 1987 Census of Manufactures, Industry 2045, Prepared Flour Mixes and Doughs, had employment of 12.2 thousand.

The total value of shipments for establishments classified in this industry was $2.8 billion.

In 1987, establishments in this industry accounted for 63 percent of products considered primary to the industry regardless of the industry in which they were produced (coverage ratio). The products primary to this industry appear in table 2 and aggregated to $2.7 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $1.5 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 2046, WET CORN MILLING

In the 1987 Census of Manufactures, Industry 2046, Wet Corn Milling, had employment of 8.6 thousand. The employment figure was 9 percent below the 9.5 thousand reported in 1982. Compared with 1986, employment in 1987 increased 4 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was $4.8 billion.

In 1987, establishments in this industry accounted for 94 percent of products considered primary to the industry regardless of the industry in which they were produced (coverage ratio). In 1982, the coverage ratio was 92 percent. The products primary to this industry appear in table 2 and aggregated to $4.4 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $2.7 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 2047, DOG AND CAT FOOD

In the 1987 Census of Manufactures, Industry 2047, Dog and Cat Food, had employment of 13.4 thousand.

The total value of shipments for establishments classified in this industry was $5.1 billion.

In 1987, establishments in this industry accounted for 97 percent of products considered primary to the industry regardless of the industry in which they were produced (coverage ratio). The products primary to this industry appear in table 2 and aggregated to $4.7 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $2.3 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 2048, PREPARED FEEDS, N.E.C.

In the 1987 Census of Manufactures, Industry 2048, Prepared Feeds, N.E.C., had employment of 34.5 thousand.

The total value of shipments for establishments classified in this industry was $11.5 billion.

In 1987, establishments in this industry accounted for 96 percent of products considered primary to the industry regardless of the industry in which they were produced (coverage ratio). The products primary to this industry appear in table 2 and aggregated to $10.7 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $8.9 billion in 1987. Data on specific materials consumed appear in table 3.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in the tables in this publication:

-	Represents zero.
(D)	Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
(NA)	Not available.
(NC)	Not comparable.
(S)	Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
(X)	Not applicable.
(Z)	Less than half the unit shown.
do	Ditto.
n.e.c.	Not elsewhere classified.
n.s.k.	Not specified by kind.
pt.	Part.
r	Revised.
SIC	Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, doz, bbl, and s tons, are used in the customary sense.

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Table 1. Historical Statistics for the Industry: 1987 and Earlier Years

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Year[1]	Companies[2] (no.)	All establishments[3] Total (no.)	All establishments[3] With 20 employees or more (no.)	All employees Number (1,000)	All employees Payroll (million dollars)	Production workers Number (1,000)	Production workers Hours (millions)	Production workers Wages (million dollars)	Value added by manufacture[4] (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures[5] (million dollars)	End-of-year inventories[4] (million dollars)	Ratios Specialization (percent)	Ratios Coverage (percent)
INDUSTRY 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS															
1987 Census	235	354	165	13.3	350.5	9.8	21.2	242.0	1 325.7	3 525.6	4 842.6	78.6	339.8	98	[6]60
1986 ASM	(NA)	(NA)	(NA)	13.5	348.7	9.9	21.4	241.3	1 345.9	3 642.5	5 003.1	62.8	318.9	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	13.3	331.5	9.8	21.0	230.1	1 159.4	4 039.0	5 204.6	82.7	407.0	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	13.9	335.5	10.3	22.3	234.4	1 208.0	4 108.5	5 305.7	66.7	396.2	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	14.7	335.4	10.9	24.2	237.3	1 198.4	4 012.1	5 228.6	64.6	354.9	(NA)	(NA)
1982 Census	251	360	174	15.1	323.0	11.4	24.2	233.3	1 094.3	3 825.5	4 932.8	90.6	361.6	97	(NA)
1981 ASM	(NA)	(NA)	(NA)	15.8	305.7	11.6	26.1	214.6	1 113.7	4 189.1	5 313.8	67.3	382.3	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	15.5	273.9	11.3	25.6	195.7	1 030.4	3 819.8	4 835.4	53.3	439.6	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	15.3	255.5	11.2	25.2	181.3	942.5	3 281.2	4 218.3	68.4	402.0	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	15.1	241.6	11.1	24.4	168.5	845.3	2 934.3	3 760.9	56.9	303.8	(NA)	(NA)
1977 Census	300	407	173	15.6	222.3	11.3	24.6	153.4	824.5	2 854.2	3 683.3	52.4	283.2	98	(NA)
1976 ASM	(NA)	(NA)	(NA)	17.5	217.1	12.5	26.9	149.0	746.1	3 343.9	4 095.9	53.6	303.3	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	17.7	204.0	12.9	27.7	139.3	714.9	3 589.5	4 327.6	45.8	328.2	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	17.4	185.3	13.0	28.1	128.7	609.1	3 902.1	4 502.2	44.0	381.1	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	17.0	167.9	12.7	28.4	118.5	589.1	2 785.7	3 326.3	29.8	375.7	(NA)	(NA)
1972 Census	340	457	181	16.1	152.8	11.9	26.9	108.1	509.8	1 885.2	2 360.0	30.0	211.3	97	(NA)
INDUSTRY 2043, CEREAL BREAKFAST FOODS															
1987 Census	33	53	34	16.0	598.9	13.1	28.4	478.6	4 904.5	1 669.8	6 565.7	333.4	306.6	79	96
1986 ASM	(NA)	(NA)	(NA)	16.4	585.1	13.3	27.8	464.9	4 513.1	1 681.4	6 167.6	270.1	308.1	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	16.3	563.1	13.3	27.3	447.1	3 994.7	1 721.2	5 718.1	228.3	275.6	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	16.2	525.9	13.2	26.8	415.0	3 478.6	1 636.2	5 107.2	189.3	264.1	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	16.3	483.0	13.3	26.7	376.3	3 069.3	1 502.0	4 571.9	176.7	255.4	(NA)	(NA)
1982 Census	32	52	37	15.6	435.0	12.8	25.5	340.0	2 622.8	1 475.0	4 131.9	165.4	229.2	77	96
1981 ASM	(NA)	(NA)	(NA)	15.6	412.6	13.4	27.6	329.0	2 361.9	1 586.7	3 950.2	126.6	251.9	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	15.9	375.5	13.7	28.1	302.3	2 108.4	1 401.6	3 476.1	138.2	250.7	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	16.3	347.2	14.1	28.6	280.0	1 859.6	1 261.3	3 095.7	[6]92.0	214.9	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	16.6	305.2	14.0	28.3	240.3	1 598.7	1 064.0	2 674.1	62.5	164.5	(NA)	(NA)
1977 Census	32	48	35	16.4	287.4	13.8	28.8	230.0	1 447.0	1 061.2	2 497.5	79.8	152.1	74	93
1976 ASM	(NA)	(NA)	(NA)	15.0	241.6	12.6	25.6	196.5	1 234.7	927.9	2 158.2	76.1	135.1	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	13.9	209.6	11.6	24.9	169.3	1 055.9	979.4	2 027.7	54.8	117.4	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	13.9	181.9	11.6	24.2	146.0	808.5	837.2	1 641.1	54.9	126.7	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	13.1	161.6	11.0	23.5	129.6	710.0	568.4	1 281.1	33.9	99.7	(NA)	(NA)
1972 Census	34	47	26	12.9	140.9	10.7	21.6	111.6	688.4	439.1	1 125.5	24.9	78.8	77	84
INDUSTRY 2044, RICE MILLING[7]															
1987 Census	49	62	34	4.4	87.7	3.4	7.1	59.3	435.5	831.6	1 210.1	48.7	476. 0	99	94
INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS[8]															
1987 Census	111	147	96	12.2	280.9	8.3	16.9	161.7	1 290.7	1 461.7	2 759.2	66.9	159.2	89	[6]63
INDUSTRY 2046, WET CORN MILLING															
1987 Census	30	60	36	8.6	299.4	5.9	13.0	193.1	2 030.0	2 745.7	4 795.7	282.5	244.9	86	94
1986 ASM	(NA)	(NA)	(NA)	8.3	263.2	5.6	12.2	167.6	1 472.8	2 778.7	4 273.5	340.5	231.3	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	8.7	266.5	6.1	13.0	177.5	1 363.4	2 826.4	4 189.7	450.9	262.2	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	8.4	247.9	5.9	12.5	167.2	1 020.3	2 803.4	3 814.8	179.3	243.5	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	8.9	254.0	6.3	13.5	171.2	1 224.1	2 279.9	3 501.2	131.3	253.3	(NA)	(NA)
1982 Census	25	42	27	9.5	254.7	6.7	13.8	170.6	1 157.4	2 101.0	3 268.4	326.2	243.4	89	92
1981 ASM	(NA)	(NA)	(NA)	10.4	266.6	7.4	14.8	185.2	1 428.7	2 403.7	3 836.0	469.7	229.6	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	10.7	242.7	7.6	14.9	166.7	1 240.6	2 018.5	3 239.1	183.1	247.0	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	10.8	216.1	7.5	14.9	152.7	847.5	1 615.5	2 442.4	140.0	208.8	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	11.1	196.9	8.1	15.9	142.8	690.0	1 443.9	2 122.5	205.3	185.9	(NA)	(NA)
1977 Census	22	39	27	10.9	191.1	7.8	15.7	132.2	666.7	1 338.0	2 014.8	232.2	156.4	94	93
1976 ASM	(NA)	(NA)	(NA)	11.0	179.8	8.0	16.5	126.1	650.2	1 352.4	2 002.5	164.7	163.7	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	10.9	162.9	7.9	16.5	112.7	672.9	1 274.8	2 141.7	157.8	142.9	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	11.1	151.4	7.7	15.9	92.5	673.4	1 197.5	1 852.1	82.1	143.6	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	11.7	143.7	8.2	17.0	94.1	359.7	768.9	1 123.0	67.3	91.7	(NA)	(NA)
1972 Census	26	41	27	12.1	137.7	8.4	17.1	88.6	331.2	498.7	832.3	59.7	82.8	93	97
INDUSTRY 2047, DOG AND CAT FOOD[9]															
1987 Census	130	180	101	13.4	365.0	9.8	20.5	243.7	2 737.9	2 287.8	5 056.7	107.2	235 1	99	97
INDUSTRY 2048, PREPARED FEEDS, N.E.C.[9]															
1987 Census	1 272	1 720	547	34.5	720.7	19.5	40.9	349.5	2 504.3	8 948.0	11 454.4	154.5	601.7	98	96

Note: Establishments of single unit companies with up to 20 employees (cutoff varied by industry) were excluded from the mail portion of the census. Data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were estimated based on administrative-record information from other agencies in conjunction with industry averages. These establishments accounted for the following percent of total value of shipments: SIC 2041, 5%; SIC 2043, 1%; SIC 2044, 14%; SIC 2045, 10%; SIC 2046, 1%; SIC 2047, 5%; SIC 2048, 21%.

[1]In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1972, see 1972 Census of Manufactures, vol. II, table 1a of the Industry chapter.

[2]For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

[3]Includes establishments with payroll at any time during year.

[4]Beginning with the 1982 Census of Manufactures, all respondents were requested to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior Censuses and annual surveys of manufactures in which respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, inventories and value added by manufacture are not comparable to prior-year data.

[5]Prepared flour mixes, doughs, and batters from industries 2041 and 2045 are included when calculating coverage ratios.

[6]Estimates for new capital expenditures have associated standard error of 15 percent or more and may be of limited reliability. Estimates for other data items are of acceptable reliability.

[7]Industry definition is new for 1987 Census of Manufactures. Head rice mixed with other ingredients was moved to SIC 2099.

[8]Industry definition is new for 1987 Census of Manufactures. Frozen doughs and batters were added from SIC 2038.

[9]Industry definition is new for 1987 Census of Manufactures. Specialty feeds (see table 2, page 9) previously included in industry 2047 are now in industry 2048.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
2041- —	**FLOUR AND OTHER GRAIN MILL PRODUCTS**						
	Total	**(NA)**	**(X)**	**4 777.5**	**(NA)**	**(X)**	**4 871.2**
20411 —	Wheat flour, except flour mixes	(NA)	(X)	3 208.4	(NA)	(X)	3 102.3
	White flour:						
	Shipped for export:						
20411 05	Commercial dollar exports, all white flour types, 1,000 sacks (cwt)	13	18 059.7	140.6	13	4 327.3	43.6
20411 07	All other exports of white flour, such as those under Public Law 480, do.	5	(S)	97.5	9	9 181.2	94.5
	Domestic shipments:						
	Bakers' and institutional white bread-type flour:						
20411 11	Shipped in bulk cars or trucks, 1,000 sacks (cwt)	20	**149 010.9	1 326.2	22	120 204.9	1 231.3
20411 13	Shipped in containers, including tote bins, do.	15	23 370.2	245.7	18	19 729.9	239.6
	Bakers' and institutional soft wheat flour, including commercial bakery, restaurant, hospital, etc.:						
20411 15	Shipped in bulk cars or trucks, 1,000 sacks (cwt)	24	38 640.3	320.9	30	52 742.8	498.2
20411 17	Shipped in containers, including tote bins, do.	19	8 692.7	89.8	19	5 171.0	56.6
	Family white flour:						
	All family flour other than self-rising, such as phosphated, plain, bromated, enriched, and all-purpose, including all-purpose purchased by the U.S. Government for domestic donation:						
20411 21	Shipped in containers less than 25 lb, 1,000 sacks (cwt)	26	*28 774.0	358.5	24	20 360.8	311.7
20411 23	Shipped in containers 25 lb or more, do.	21	*9 907.7	99.3	17	3 019.2	48.6
20411 26	Self-rising flour, do.	18	3 664.1	66.2	(NA)	4 884.0	84.7
	Flour shipped to blenders or other processors (for further processing and/or packing before resale or shipment):						
20411 29	For use in food products (mixes, refrigerated doughs, soups, etc.), 1,000 sacks (cwt)	11	**10 700.9	81.6	18	17 618.6	163.2
20411 28	For use in nonfood products (pet food, industrial, etc.), do.	13	*3 062.3	16.6	10	3 549.5	25.7
	Other than white flour:						
20411 31	Whole wheat, 1,000 sacks (cwt)	17	4 633.4	50.4	17	2 465.9	27.8
20411 51	Durum flour and semolina, do.	10	26 727.8	258.3	9	17 676.5	192.9
20411 61	Bulgur, do.	5	(S)	30.1	5	5 171.2	49.4
20411 98	Other wheat flour, including farina, do.	11	(S)	21.4	11	1 489.2	18.0
20411 00	Wheat flour, except flour mixes (including white flour, whole wheat, durum, etc., made from wheat ground in this plant), n.s.k.	(NA)	(X)	5.2	(NA)	(X)	16.3
20412 —	Wheat mill products other than flour	(NA)	(X)	336.9	(NA)	(X)	478.5
20412 13	Wheat mill feed, 1,000 s tons	47	*5 556.6	298.3	64	5 061.9	456.9
20412 19	Other wheat mill products, including wheat germ, wheat bran, etc., do.	27	309.4	38.4	9	28.6	8.4
20412 00	Wheat mill products other than flour, n.s.k.	(NA)	(X)	.2	(NA)	(X)	13.2
20413 —	Corn mill products	(NA)	(X)	554.1	(NA)	(X)	553.8
	Corn products for human consumption:						
20413 11	Whole commeal, 1,000 sacks (cwt)	10	(S)	36.8	22	3 191.2	51.2
20413 15	Degermed commeal, do.	9	*5 482.6	165.3	12	7 648.3	111.8
20413 21	Corn grits and hominy, except for brewers' use, do.	4	**8 310.1	54.5	10	6 746.3	87.8
20413 23	Corn grits and flakes for brewers' use, do.	5	*3 147.9	18.5	8	6 537.4	55.0
20413 65	Hominy feed, commeal, and other byproducts of dry corn milling (for animal feed), 1,000 s tons	31	*823.7	68.9	40	1 396.7	138.2
20413 93	Corn flour, 1,000 sacks (cwt)	8	(S)	111.8	8	4 785.7	51.9
	Other corn mill products:						
20413 95	For human consumption, 1,000 sacks (cwt)	9	8 272.0	89.9	11	2 858.6	44.5
20413 97	Not for human consumption, do.	6	1 095.5	7.7	5	412.2	3.5
20413 00	Corn mill products, n.s.k.	(NA)	(X)	.7	(NA)	(X)	10.0
20415 —	Flour mixes and refrigerated and frozen doughs and batters, made in flour mills (see also code 20450)	(NA)	(X)	436.7	(NA)	(X)	382.4
	Flour mixes:						
	Pancake and waffle mixes:						
20415 51	Shipped in containers less than 5 lb, 1,000 sacks (cwt)	11	**1 653.8	56.9	8	726.1	37.9
20415 52	Shipped in containers 5 lb or more, do.	3	(D)	(D)	4	155.3	5.8
	Cake mixes, including gingerbread:						
20415 53	Shipped in containers less than 5 lb, 1,000 sacks (cwt)	4	(D)	(D)	5	1 381.9	97.8
20415 54	Shipped in containers 5 lb or more, do.	4	(D)	(D)	3	329.4	12.4
	Biscuit mixes:						
20415 56	Shipped in containers less than 5 lb, 1,000 sacks (cwt)	10	*527.7	18.0	7	525.7	20.0
20415 57	Shipped in containers 5 lb or more, do.	4	(D)	(D)	6	212.5	8.5
20415 60	Pie crust mixes, do.	1	(D)	(D)	2	(D)	(D)
20415 63	Doughnuts and other sweet yeast goods mixes, do.	3	(D)	(D)	3	(D)	(D)
	Bread and bread-type roll mixes:						
20415 66	Shipped in containers less than 5 lb, 1,000 sacks (cwt)	3	117.7	7.6	2	(D)	(D)
20415 67	Shipped in containers 5 lb or more, do.	5	534.1	18.3	5	693.3	17.0

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
2041- —	**FLOUR AND OTHER GRAIN MILL PRODUCTS—Con.**						
20415 —	Flour mixes and refrigerated and frozen doughs and batters, made in flour mills (see also code 20450)—Con.						
	Flour mixes—Con.						
20415 72	Other prepared flour mixes, including cookie mixes: Shipped in containers less than 5 lb	1,000 sacks (cwt)	5	(D)	(D)	8	*1 660.8	75.6
20415 74	Shipped in containers 5 lb or more	do	5	(S)	11.3	10	865.7	20.2
	Refrigerated doughs and batters:							
20415 81	Biscuit dough	mil lb	-	-	-	-	-	-
20415 85	Bread and bread-type roll dough, including dinner	do	-	-	-	-	-	-
20415 87	Other doughs and batters, including pizza, coffeecake, pancake, cookie, etc.	do	2	(D)	(D)	2	(D)	(D)
	Frozen doughs and batters:							
20415 91	Bread and bread-type roll dough	mil lb	9	(D)	(D)	(NA)	(3)	(3)
20415 93	Other frozen doughs and batters, including pizza, coffeecake, pancake, cookie, etc.	do	5	(D)	(D)	(NA)	(3)	(3)
20415 00	Flour mixes and refrigerated doughs, n.s.k.		(NA)	(X)	-	(NA)	(X)	(D)
20416 —	Other grain mill products		(NA)	(X)	82.2	(NA)	(X)	165.6
20416 11	Rye flour	1,000 sacks (cwt)	3	1 103.5	9.2	6	1 434.8	16.6
20416 23	Other flour (excluding wheat, corn, rye)	do	4	(D)	(D)	9	3 063.6	44.9
20416 27	Other mill feed (oats, rye, buckwheat, etc.)	1,000 s tons	9	(D)	(D)	13	613.5	101.7
20416 00	Other grain mill products, n.s.k.		(NA)	(X)	1.4	(NA)	(X)	2.5
20410 —	Flour and other grain mill products, n.s.k.		(NA)	(X)	159.2	(NA)	(X)	188.9
20410 00	Flour and other grain mill products, n.s.k., typically for establishments with 5 employees or more (see note)		(NA)	(X)	21.4	(NA)	(X)	141.4
20410 02	Flour and other grain mill products, n.s.k., typically for establishments with less than 5 employees (see note)		(NA)	(X)	136.9	(NA)	(X)	47.5
2043- —	**CEREAL BREAKFAST FOODS**							
	Total		**(NA)**	**(X)**	**5 081.1**	**(NA)**	**(X)**	**3 111.5**
20430 —	Cereal breakfast foods:							
	Ready to serve:							
20430 11	Corn flakes and other corn breakfast foods	mil lb	9	804.9	1 302.3	6	705.3	811.2
20430 12	Wheat flakes and other wheat breakfast foods	do	10	844.7	1 359.6	10	719.8	811.1
20430 15	Oat breakfast foods	do	10	380.4	706.9	9	(D)	(D)
20430 17	Rice breakfast foods	do	9	256.9	518.1	7	275.8	394.2
20430 21	Preparations of other grains and mixed grains, except infants' cereals	do	13	366.0	743.1	13	289.0	338.5
20430 23	Infants' cereals, all types of grains	do	4	(D)	(D)			
	To be cooked before serving:							
20430 55	Farina and other wheat foods, except instant cereals	mil lb	5	82.0	60.2	8	118.7	84.3
20430 57	Rolled oats and oatmeal, except instant cereals	do	4	287.7	120.5	5	(D)	(D)
20430 61	Preparations of other grains and mixed grains, except instant cereals	do	3	9.8	9.0	3	9.2	7.2
20430 63	Instant hot cereals, all types of grain (mix-and-eat type)	do	3	(D)	(D)			
20430 00	Cereal breakfast foods, n.s.k., typically for establishments with 10 employees or more (see note)		(NA)	(X)	6.2	(NA)	(X)	2.4
20430 02	Cereal breakfast foods, n.s.k., typically for establishments with less than 10 employees (see note)		(NA)	(X)	9.7	(NA)	(X)	3.1
2044- —	**RICE MILLING**							
	Total		**(NA)**	**(X)**	***1 257.4**	**(NA)**	**(X)**	***1 797.0**
20440 —	Milled rice and byproducts:							
	Head rice not packaged with other ingredients:							
20440 11	Packed in bags 100 lb or more	mil lb	27	**5 357.7	517.7	25	5 491.7	935.3
20440 15	Packed in containers 3 lb or less	do	12	651.8	106.1	17	554.0	176.5
20440 17	Packed in all other containers	do	15	*3 321.7	448.3	19	2 229.2	492.4
20440 21	Second heads	do	14	480.8	30.3	13	348.5	36.6
20440 35	Screenings and brewers' rice	do	14	622.4	33.1	16	542.8	47.0
20440 51	Bran	do	14	(S)	14.8	16	997.7	29.7
20440 99	All other milled rice and byproducts, including rice flour	do	12	(S)	85.0	15	4 050.1	46.8
20440 00	Milled rice products, n.s.k., typically for establishments with 10 employees or more (see note)		(NA)	(X)	27.3	(NA)	(X)	24.4
20440 02	Milled rice products, n.s.k., typically for establishments with less than 10 employees (see note)		(NA)	(X)	16.8	(NA)	(X)	8.2
2045- —	**PREPARED FLOUR MIXES AND DOUGHS**							
	Total		**(NA)**	**(X)**	**2 712.2**	**(NA)**	**(X)**	**1 881.8**
20450 —	Flour mixes and refrigerated and frozen doughs and batters, not made in flour mills (see also code 20415):							
	Flour mixes:							
	Pancake and waffle mixes:							
20450 51	Shipped in containers less than 5 lb	1,000 sacks (cwt)	6	730.4	43.5	10	2 854.3	114.4
20450 52	Shipped in containers 5 lb or more	do	8	1 914.5	85.4	10	812.6	17.3
	Cake mixes, including gingerbread:							
20450 53	Shipped in containers less than 5 lb	1,000 sacks (cwt)	8	(D)	(D)	12	6 181.1	451.5
20450 54	Shipped in containers 5 lb or more	do	19	4 893.9	355.9	16	**818.4	42.4

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
2045- —	**PREPARED FLOUR MIXES AND DOUGHS**—Con.						
20450 —	Flour mixes and refrigerated and frozen doughs and batters, not made in flour mills (see also code 20415)—Con.						
	Flour mixes—Con.						
	Biscuit mixes:						
20450 56	Shipped in containers less than 5 lb, 1,000 sacks (cwt)	3	(D)	(D)	4	519.5	7.5
20450 57	Shipped in containers 5 lb or more, do.	7	171.7	6.1	11	*521.4	19.0
20450 60	Pie crust mixes, do.	7	226.4	14.7	9	(D)	(D)
20450 63	Doughnuts and other sweet yeast goods mixes, do.	14	6 215.3	168.1	17	(D)	(D)
	Bread and bread-type roll mixes:						
20450 66	Shipped in containers less than 5 lb, 1,000 sacks (cwt)	3	(D)	(D)	5	(D)	(D)
20450 67	Shipped in containers 5 lb or more, do.	15	1 995.3	91.1	15	1 749.6	41.4
	Other prepared flour mixes, including cookie mixes:						
20450 72	Shipped in containers less than 5 lb, 1,000 sacks (cwt)	8	3 149.1	235.3	12	*3 664.3	242.4
20450 74	Shipped in containers 5 lb or more, do.	12	3 832.7	153.7	13	3 438.4	88.9
	Refrigerated doughs and batters:						
20450 81	Biscuit dough, mil lb.	4	(D)	(D)	4	(D)	(D)
20450 85	Bread and bread-type roll dough, including dinner, do.	2	(D)	(D)	5	(D)	(D)
20450 87	Other doughs and batters, including pizza, coffeecake, pancake, cookie, etc., do.	10	281.1	222.5	15	(D)	(D)
	Frozen doughs and batters:						
20450 91	Bread and bread-type roll dough, mil lb.	26	*470.2	232.3	(NA)	(3)	(3)
20450 93	Other frozen doughs and batters, including pizza, coffeecake, pancake, cookie, etc., do.	27	500.8	238.6	(NA)	(3)	(3)
20450 00	Flour mixes and refrigerated doughs, not made in flour mills, n.s.k., typically for establishments with 5 employees or more (see note)	(NA)	(X)	146.3	(NA)	(X)	(D)
20450 02	Flour mixes and refrigerated doughs, not made in flour mills, n.s.k., typically for establishments with less than 5 employees (see note)	(NA)	(X)	68.2	(NA)	(X)	15.5
2046- —	**WET CORN MILLING**						
	Total	**(NA)**	**(X)**	**4 434.2**	**(NA)**	**(X)**	**3 105.7**
20461 —	Corn sweeteners	(NA)	(X)	2 182.7	(NA)	(X)	1 610.4
	Glucose syrup (corn syrup):						
20461 03	Type I (20 up to 38 dextrose equivalent), mil lb.	4	730.6	79.5	5	769.9	65.6
20461 04	Type II (38 up to 58 dextrose equivalent), do.	7	3 021.4	231.4	7	1 799.7	159.7
20461 13	Type III (58 up to 90 dextrose equivalent), do.	4	677.6	45.5	6	1 692.4	151.5
20461 16	Type IV (90 dextrose equivalent or more), do.	2	(D)	(D)	5	601.1	51.3
20461 17	Glucose syrup solids (dried glucose syrup), do.	4	201.5	27.8	6	251.8	54.7
20461 19	Dextrose monohydrate and dextrose anhydrous, including crystalline fructose (dry fructose), do.	4	1 823.5	208.6	3	1 277.5	227.2
	High fructose corn syrup (HFCS):						
20461 31	25 up to 50 percent fructose, mil lb.	9	5 163.1	468.3	8	4 546.2	435.3
20461 34	50 up to 80 percent fructose, do.	7	9 050.2	993.7	8	3 737.4	462.4
20461 37	80 percent fructose or more, do.	3	(D)	(D)	(NA)		
20461 00	Corn sweeteners, n.s.k.	(NA)	(X)	11.7	(NA)	(X)	-
20462 —	Manufactured starch	(NA)	(X)	773.0	(NA)	(X)	655.1
20462 41	Corn starch, including milo, mil lb.	10	5 619.5	613.2	11	5 026.9	579.2
20462 43	Other starch, including irish potato, wheat, rice, etc., do.	8	576.2	106.7	11	452.0	47.5
20462 47	Dextrin (corn, tapioca, and other), do.	3	(D)	(D)	(NA)	(D)	(D)
20462 49	Maltodextrins less than 20 dextrose equivalent, do.	2	(D)	(D)	(NA)	(D)	(D)
20462 00	Manufactured starch, n.s.k.	(NA)	(X)	8.5	(NA)	(X)	-
20463 —	Corn oil	(NA)	(X)	598.6	(NA)	(X)	234.9
20463 53	Crude, mil lb.	10	992.5	264.0	14	650.8	136.1
20463 54	Once-refined, after alkali or caustic wash, but before deodorizing or use in end products, do.	5	(D)	(D)	8	340.8	98.8
20463 56	Fully-refined, including margarine oil, do.	8	(D)	(D)			
20463 59	Once-refined, purchased and deodorized only, do.	5	88.8	24.3			
20463 00	Corn oil, n.s.k.	(NA)	(X)	2.9	(NA)	(X)	-
20464 —	Wet process corn byproducts	(NA)	(X)	845.8	(NA)	(X)	577.7
20464 62	Corn gluten feed, mil lb.	10	7 120.3	474.9	12	5 850.9	332.2
20464 65	Corn gluten meal, do.	11	1 491.6	213.5	10	1 164.9	133.1
20464 72	Gluten (except corn), including wheat, rice, potato, etc., do.	6	430.3	71.3			
20464 75	Other wet process corn byproducts, including steepwater concentrate (50 percent solids basis), do.	8	1 319.1	80.8	10	1 478.1	112.4
20464 00	Wet process corn byproducts, n.s.k.	(NA)	(X)	5.3	(NA)	(X)	-
20460 —	Wet corn milling products, n.s.k.	(NA)	(X)	34.1	(NA)	(X)	27.6
20460 00	Wet corn milling products, n.s.k., typically for establishments with 15 employees or more (see note)	(NA)	(X)	34.6	(NA)	(X)	22.8
20460 02	Wet corn milling products, n.s.k., typically for establishments with less than 15 employees (see note)	(NA)	(X)	9.5	(NA)	(X)	4.8
2047- —	**DOG AND CAT FOOD**						
	Total	**(NA)**	**(X)**	**4 700.9**	**(NA)**	**(X)**	**4 080.8**
20473 —	Dog food	(NA)	(X)	3 068.0	(NA)	(X)	2 655.4
	Canned:						
20473 21	Ration type, mil lb.	14	568.9	189.5	19	951.7	236.6
20473 23	Other, do.	12	1 232.2	613.7	14	1 190.0	438.9
	Dry and semimoist:						
20473 26	Shipped in packages less than 25 lb, mil lb.	38	3 519.7	969.7	43	2 333.1	771.2
20473 38	Shipped in packages 25 lb or more, do.	72	4 364.4	1 255.0	76	5 539.9	1 183.1
20473 00	Dog food, n.s.k.	(NA)	(X)	38.1	(NA)	(X)	25.6

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
2047- —	**DOG AND CAT FOOD**—Con.						
20474 —	Cat food	(NA)	(X)	1 444.9	(NA)	(X)	1 272.9
	Canned:						
20474 41	Fish base — mil lb	17	678.2	366.4	17	715.9	148.5
20474 43	Meat base — do	13	441.0	269.6	10	824.9	424.5
20474 45	Other (ration meal base) — do	4	(D)	(D)	7	87.2	22.6
20474 54	Dry — do	29	1 297.2	639.1	32	1 285.7	506.9
20474 57	Semimoist — do	6	(D)	(D)	7	207.5	170.5
20474 00	Cat food, n.s.k. — do	(NA)	123.5	9.2	(NA)	(X)	-
20470 —	Dog and cat food, n.s.k.	(NA)	(X)	190.0	(NA)	(X)	152.5
20470 00	Dog and cat food, n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(X)	131.1	(NA)	(X)	106.9
20470 02	Dog and cat food, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	57.2	(NA)	(X)	45.6
2048- —	**PREPARED FEEDS, N.E.C.**						
	Total	**(NA)**	**(X)**	**10 661.3**	**(NA)**	**(X)**	**10 847.1**
20481 —	Chicken and turkey feed, supplements, concentrates, and premixes	(NA)	(X)	3 248.3	(NA)	(X)	3 642.1
	Complete feeds:						
	Chicken:						
20481 11	Starter-grower — 1,000 s tons	93	2 296.8	340.9	106	2 580.7	412.8
20481 15	Layer-breeder — do	130	4 396.5	569.3	154	4 715.4	722.8
20481 16	Broiler — do	47	8 861.0	1 291.4	63	8 779.0	1 445.9
20481 18	Turkey — do	54	2 075.2	316.8	56	1 932.2	338.1
	Feed supplements and concentrates:						
	Chicken:						
20481 21	Starter-grower — 1,000 s tons	26	(S)	23.8	26	[5]158.5	[5]32.1
20481 22	Layer-breeder — do	32	756.2	59.0	54	[5]554.0	[5]134.8
20481 23	Broiler — do	14	(S)	76.2	20	[5]1 386.0	[5]344.9
20481 24	Turkey — do	19	*118.8	26.6	20	[5]147.6	[5]33.3
	Feed premixes (feed-base):						
	Chicken:						
20481 31	Starter-grower — 1,000 s tons	16	109.0	29.3	(NA)	[5]	[5]
20481 32	Layer-breeder — do	20	(S)	20.8	(NA)	[5]	[5]
20481 33	Broiler — do	14	(S)	32.7	(NA)	[5]	[5]
20481 34	Turkey — do	8	10.0	6.2	(NA)	[5]	[5]
20481 00	Chicken and turkey feed, n.s.k. — do	(NA)	(X)	455.5	(NA)	[5]	[5]
20482 —	Dairy cattle feed, complete:						
20482 00	Dairy cattle feed, complete — 1,000 s tons	189	*9 077.2	1 188.9	211	*9 218.1	1 473.9
20483 —	Dairy cattle feed supplements, concentrates, and premixes	(NA)	(X)	533.6	(NA)	(X)	544.3
20483 01	Feed supplements and concentrates — 1,000 s tons	118	1 682.8	391.8			
20483 02	Feed premixes (feed-base) — do	48	**157.5	84.1	147	2 122.4	544.3
20483 00	Dairy cattle feed supplements, concentrates, and premixes, n.s.k.	(NA)	(X)	57.6			
20484 —	Swine feed, complete:						
20484 00	Swine feed, complete — 1,000 s tons	113	2 499.7	415.3	209	*2 820.1	585.9
20485 —	Swine feed supplements, concentrates, and premixes	(NA)	(X)	1 259.8	(NA)	(X)	1 113.7
20485 03	Feed supplements and concentrates — 1,000 s tons	116	3 347.1	928.5			
20485 04	Feed premixes (feed-base) — do	56	1 082.2	255.2	153	3 747.7	1 113.7
20485 00	Swine feed supplements, concentrates, and premixes, n.s.k.	(NA)	(X)	76.2			
20486 —	Beef cattle feed, complete:						
20486 00	Beef cattle feed, complete — 1,000 s tons	134	*3 066.8	420.5	176	*3 389.8	511.4
20487 —	Beef cattle feed supplements, concentrates, and premixes	(NA)	(X)	543.6	(NA)	(X)	607.7
20487 05	Feed supplements and concentrates — 1,000 s tons	103	*3 333.5	471.7			
20487 06	Feed premixes (feed-base) — do	32	172.2	66.9	129	3 033.3	607.7
20487 00	Beef cattle feed supplements, concentrates, and premixes, n.s.k.	(NA)	(X)	5.0			
20488 —	Other poultry and livestock feed, including duck, goose, horse, mule, etc.	(NA)	(X)	421.2	(NA)	(X)	400.6
	Poultry:						
20488 11	Complete feeds (duck, etc.) — 1,000 s tons	18	**85.4	12.7	20	134.6	34.4
20488 12	Feed supplements and concentrates (duck, etc.) — do	5	(S)	4.6	9	*21.1	5.9
20488 13	Feed premixes (feed-base) (duck, etc.) — do	9	188.9	52.9			
	Livestock:						
	Complete livestock feeds:						
20488 16	Horse and mule — 1,000 s tons	119	1 171.9	224.1	125	*1 156.3	204.5
20488 21	Other (sheep, etc.) — do	42	*180.0	45.6	49	758.4	93.8
	Livestock feed supplements and concentrates:						
20488 23	Horse and mule — 1,000 s tons	24	82.5	16.1	25	[5]100.7	[5]19.4
20488 25	Other (sheep, etc.) — do	28	*180.2	25.8	30	[5]124.7	[5]25.0

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1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
2048- —	**PREPARED FEEDS, N.E.C.**—Con.						
20488 —	Other poultry and livestock feed, including duck, goose, horse, mule, etc.—Con.						
	Livestock—Con.						
	Livestock feed premixes (feed-base):						
20488 31	Horse and mule ..... 1,000 s tons	13	**20.9	6.4	(NA)	(*)	(*)
20488 33	Other (sheep, etc.) ..... do	13	(S)	10.9	(NA)	(*)	(*)
20488 00	Other poultry and livestock feed, including duck, goose, horse, mule, etc., n.s.k.	(NA)	(X)	22.1	(NA)	(X)	17.5
20489 —	Other prepared animal feeds, including feeding materials and adjuncts	(NA)	(X)	472.1	(NA)	(X)	361.2
20489 11	Grain—ground, rolled, pulverized, chopped, or crimped, excluding cornmeal ..... mil sacks (cwt)	70	(S)	215.3	83	*12.9	118.9
20489 22	Mineral mixtures, including oyster shells prepared for feed use ..... mil lb	54	1 736.4	134.1	63	*724.4	120.0
	Alfalfa meal:						
20489 35	Dehydrated ..... 1,000 s tons	29	(S)	35.2	46	*594.7	58.6
20489 39	Sun cured and cubed ..... do	4	(S)	47.9	17	**150.9	13.8
20489 00	Other prepared animal feeds, n.s.k.	(NA)	(X)	39.6	(NA)	(X)	49.8
2048A —	Specialty feeds	(NA)	(X)	524.5	(NA)	(X)	*358.9
2048A 01	Fresh and frozen meat of horses and other animals for pet food ..... mil lb	16	(S)	52.4	8	68.8	43.6
2048A 03	Other pet food, except dog and cat ..... do	17	(S)	107.5	22	*190.7	35.7
2048A 05	Laboratory (mouse, guinea pig, etc.) ..... 1,000 s tons	8	89.3	24.0	9	66.2	25.0
2048A 07	Fur (mink, fox, etc.) ..... do	8	**24.5	9.8	11	131.3	38.6
2048A 09	Bird (wild, tame, pigeon, game) ..... do	30	*225.9	67.9	27	165.0	51.4
2048A 11	Rabbit ..... do	40	151.5	27.9	53	237.2	45.5
2048A 13	Other ..... do	46	449.8	194.8	54	*392.2	113.6
2048A 00	Specialty feeds, n.s.k.	(NA)	(X)	40.2	(NA)	(X)	7.6
20480 —	Prepared feeds, n.e.c., n.s.k.	(NA)	(X)	1 633.6	(NA)	(X)	1 247.4
20480 00	Prepared feeds, n.e.c., n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(X)	1 170.7	(NA)	(X)	936.4
20480 02	Prepared feeds, n.e.c., n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	451.9	(NA)	(X)	311.0

Note: In 1987 Census of Manufactures, data for establishments of small single unit companies with up to 20 employees were estimated from administrative-records data rather than data actually collected from respondents. Employment cutoffs used for administrative-records for each industry and shipments figures are included in code ending with "002". In both 1987 and 1982 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000".

[1]Data reported by all producers, not just those with shipments of $100,000 or more.

[2]For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

[3]In 1982, frozen doughs and batters were included in industry 2038, but were not collected as separate product categories.

[4]In 1982, head rice mixed with other ingredients was included in this industry and valued at $100.4 million. For 1987, it was included in industry 2099 and valued at 225.0 million.

[5]In 1982, feed premixes, supplements, and concentrates were not collected as separate categories.

[6]In 1982, specialty feeds were classified in industry 2047.

Table 3. Materials Consumed by Kind: 1987 and 1982

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987		1982	
		Quantity[1]	Delivered cost (million dollars)	Quantity[1]	Delivered cost (million dollars)
	INDUSTRY 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS				
	Materials, ingredients, containers, and supplies	**(X)**	**3 207.9**	**(X)**	**3 586.6**
	Grain:				
011111	Wheat ..... mil bushels	*799.0	2 344.4	652.2	2 655.8
011521	Corn ..... do	**108.2	185.6	69.2	198.4
011931	Oats ..... do	**16.6	27.3	(D)	(D)
011913	Barley ..... do	**.8	1.6	1.3	3.8
011961	Sorghum ..... do	(S)	4.5	(D)	(D)
204110	Wheat flour ..... 1,000 cwt	*17 138.9	140.3	8 017.5	84.9
206011	Sugar (cane and beet) in terms of sugar solids ..... 1,000 s tons	(S)	25.2	91.5	44.1
207003	Fats and oils for use in flour and prepared flour mixes ..... mil lb	**41.8	22.2	77.4	25.5
239303	Textile bags (including burlap, cotton, polypropylene, etc.) ..... mi bags	**64.8	15.9	**60.6	16.8
267420	Paper shipping sacks ..... mil sacks	521.8	98.1	(S)	39.2
265001	Paperboard containers, boxes, and corrugated paperboard	(X)	25.1	(X)	27.0
970099	All other materials, ingredients, containers, and supplies	(X)	139.7	(X)	286.9
971000	Materials, ingredients, containers, and supplies, n.s.k.[2]	(X)	178.0	(X)	151.2

See footnotes at end of table.

Table 3. Materials Consumed by Kind: 1987 and 1982—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987 Quantity[1]	1987 Delivered cost (million dollars)	1982 Quantity[1]	1982 Delivered cost (million dollars)
	INDUSTRY 2043, CEREAL BREAKFAST FOODS				
	Materials, ingredients, containers, and supplies	(X)	**1 423.7**	(X)	**1 250.7**
011111	Wheat — mil bushels	29.4	68.3	11.8	68.2
011241	Rice, rough — mil lb	282.5	30.6	265.1	50.7
011931	Oats — mil bushels	42.8	46.7	(D)	(D)
203415	Dried fruits and nuts (including raisins) — 1,000 cwt	1 803.6	143.1	797.9	78.9
204110	Wheat flour — do	4 022.5	31.0	3 577.3	42.1
204001	Flour other than wheat and prepared flour mixes — do	4 069.2	47.8	2 965.8	45.1
206011	Sugar (cane and beet) — 1,000 s tons	408.2	198.7	328.4	161.3
207003	Fats and oils for use in flour and prepared flour mixes — mil lb	86.2	23.0	(D)	(D)
190003	Flexible packaging materials	(X)	90.7	(X)	55.9
265001	Paperboard containers, boxes, and corrugated paperboard	(X)	313.6	(X)	257.2
970099	All other materials, ingredients, containers, and supplies	(X)	407.9	(X)	382.1
971000	Materials, ingredients, containers, and supplies, n.s.k.[2]	(X)	2.3	(X)	1.4
	INDUSTRY 2044, RICE MILLING				
	Materials, ingredients, containers, and supplies	(X)	**796.1**	(NA)	(NA)
011241	Rice, rough — mil lb	11 733.2	737.4	(NA)	(NA)
970099	All other materials, ingredients, containers, and supplies	(X)	43.2	(NA)	(NA)
971000	Materials, ingredients, containers, and supplies, n.s.k.[2]	(X)	15.5	(NA)	(NA)
	INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS				
	Materials, ingredients, containers, and supplies	(X)	**1 324.8**	(NA)	(NA)
204110	Wheat flour — 1,000 cwt	35 285.5	337.1	(NA)	(NA)
204001	Flour, other than wheat, and prepared flour mixes — do	*664.3	37.1	(NA)	(NA)
206011	Sugar (cane and beet) — 1,000 s tons	205.2	101.0	(NA)	(NA)
207003	Fats and oils for use in flour and prepared flour mixes — mil lb	181.4	47.4	(NA)	(NA)
190003	Flexible packaging materials	(X)	17.7	(NA)	(NA)
265001	Paperboard containers, boxes, and corrugated paperboard	(X)	89.9	(NA)	(NA)
970099	All other materials, ingredients, containers, and supplies	(X)	528.4	(NA)	(NA)
971000	Materials, ingredients, containers, and supplies, n.s.k.[2]	(X)	166.5	(NA)	(NA)
	INDUSTRY 2046, WET CORN MILLING				
	Materials, ingredients, containers, and supplies	(X)	**2 219.7**	(X)	**1 733.1**
011001	Corn, including sorghum grain — mil bushels	16 393.7	1 427.1	480.6	1 370.8
970099	All other materials, ingredients, containers, and supplies	(X)	757.1	(X)	352.2
971000	Materials, ingredients, containers, and supplies, n.s.k.[2]	(X)	35.5	(X)	10.1
	INDUSTRY 2047, DOG AND CAT FOOD				
	Materials, ingredients, containers, and supplies	(X)	**1 802.3**	(NA)	(NA)
	Grain:				
011101	Wheat — 1,000 s tons	*404.2	37.6	(NA)	(NA)
011503	Corn — do	1 469.6	107.9	(NA)	(NA)
011901	Oats — do	*34.1	5.1	(NA)	(NA)
011904	Barley — do	(S)	2.5	(NA)	(NA)
011905	Sorghum — do	94.1	8.7	(NA)	(NA)
203703	Citrus pulp — do	.4	3.5	(NA)	(NA)
204110	Wheat flour — 1,000 cwt	1 942.3	20.9	(NA)	(NA)
206011	Sugar (cane and beet) in terms of sugar solids — 1,000 s tons	**14.2	2.3	(NA)	(NA)
206013	Molasses — do	9.4	1.9	(NA)	(NA)
207004	Fats and oils used in animal feeds — do	186.5	58.3	(NA)	(NA)
207441	Cottonseed cake and meal — do	27.0	15.4	(NA)	(NA)
207521	Soybean cake and meal — do	437.3	103.0	(NA)	(NA)
207631	Other oilseed cake and meal — do	3.9	.8	(NA)	(NA)
204893	Alfalfa meal, excluding alfalfa hay — do	22.9	2.8	(NA)	(NA)
204135	Corn meal — 1,000 cwt	(S)	11.5	(NA)	(NA)
204133	Hominy feed and meal — 1,000 s tons	(S)	3.9	(NA)	(NA)
204607	Corn gluten feed and meal — do	277.2	61.2	(NA)	(NA)
207721	Meat meal and tankage — do	565.9	143.8	(NA)	(NA)
207736	Fish meal and solubles (dry weight equivalent) — do	72.7	37.0	(NA)	(NA)
207722	Poultry feather and byproducts meal — do	324.9	75.1	(NA)	(NA)
208249	Brewers' and distillers' grains — do	84.1	9.4	(NA)	(NA)
257321	Urea — do	.8	.1	(NA)	(NA)
204801	Supplements and concentrates (mixture of feed ingredients)	(X)	2.1	(NA)	(NA)
	Millfeed and screenings:				
204122	Wheat — 1,000 s tons	243.0	22.6	(NA)	(NA)
207522	Soybean — do	59.1	10.2	(NA)	(NA)
204161	Other — do	(S)	3.1	(NA)	(NA)
	Minerals, except trace minerals:				
281990	Calcium — 1,000 s tons	(S)	2.0		
281996	Phosphorus, elemental (technical) — do	(S)	6.1	(NA)	(NA)
289912	Salt — do	(S)	4.0		
281999	Other — do	21.7	9.8		
	Microingredients:				
283301	Vitamins	(X)	15.2	(NA)	(NA)
283302	Drugs and antibiotics	(X)	.8	(NA)	(NA)
283304	Other, including trace minerals	(X)	30.3	(NA)	(NA)
190003	Flexible packaging materials	(X)	-	(NA)	(NA)
239305	Textile bags (including burlap, cotton, polypropylene, etc.) — mi bags	155.0	33.5	(NA)	(NA)
267420	Paper shipping sacks — mil sacks	435.4	107.0	(NA)	(NA)
265001	Paperboard containers, boxes, and corrugated paperboard	(X)	103.2	(NA)	(NA)
340001	Metal containers	(X)	313.1	(NA)	(NA)
970099	All other materials, ingredients, containers, and supplies	(X)	322.3	(NA)	(NA)
971000	Materials, ingredients, containers, and supplies, n.s.k.[2]	(X)	104.8	(NA)	(NA)

See footnotes at end of table.

Table 3. Materials Consumed by Kind: 1987 and 1982—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987		1982	
		Quantity[1]	Delivered cost (million dollars)	Quantity[1]	Delivered cost (million dollars)
	INDUSTRY 2048, PREPARED FEEDS, N.E.C.				
	Materials, ingredients, containers, and supplies	(X)	**8 085.0**	(NA)	(NA)
	Grain:				
011101	Wheat — 1,000 s tons	*1 384.1	83.7	(NA)	(NA)
011503	Corn — do.	15 820.9	1 059.8	(NA)	(NA)
011901	Oats — do.	*602.9	65.6	(NA)	(NA)
011904	Barley — do.	(D)	(D)	(NA)	(NA)
011905	Sorghum — do.	*2 113.6	164.9	(NA)	(NA)
203703	Citrus pulp — do.	(D)	(D)	(NA)	(NA)
204110	Wheat flour — 1,000 cwt.	(D)	(D)	(NA)	(NA)
206011	Sugar (cane and beet) in terms of sugar solids — 1,000 s tons	(S)	10.9	(NA)	(NA)
206013	Molasses — do.	*1 535.2	70.1	(NA)	(NA)
207004	Fats and oils used in animal feeds — do.	803.8	172.0	(NA)	(NA)
207441	Cottonseed cake and meal — do.	(D)	(D)	(NA)	(NA)
207521	Soybean cake and meal — do.	(D)	(D)	(NA)	(NA)
207631	Other oilseed cake and meal — do.	(D)	(D)	(NA)	(NA)
204893	Alfalfa meal, excluding alfalfa hay — do.	(D)	(D)	(NA)	(NA)
204135	Corn meal — 1,000 cwt.	(D)	(D)	(NA)	(NA)
204133	Hominy feed and meal — 1,000 s tons	355.1	83.0	(NA)	(NA)
204607	Corn gluten feed and meal — do.	(D)	(D)	(NA)	(NA)
207721	Meat meal and tankage — do.	278.0	97.6	(NA)	(NA)
207736	Fish meal and solubles (dry weight equivalent) — do.	443.4	93.1	(NA)	(NA)
207722	Poultry feathers and byproducts meal — do.	*479.3	52.5	(NA)	(NA)
208249	Brewers' and distillers' grains — do.	(D)	(D)	(NA)	(NA)
287321	Urea — do.	(X)	(D)	(NA)	(NA)
204801	Supplements and concentrates (mixture of feed ingredients)				
	Millfeed and screenings:				
204122	Wheat — 1,000 s tons	2 940.1	185.8	(NA)	(NA)
207522	Soybean — do.	1 487.0	53.9	(NA)	(NA)
204161	Other — do.	1 068.6	70.4	(NA)	(NA)
	Minerals, except trace minerals:				
281990	Calcium — 1,000 s tons	24 799.5	39.6	(NA)	(NA)
281996	Phosphorus, elemental (technical) — do.	600.4	116.0		
289912	Salt — do.	477.8	17.3		
281999	Other — do.	288.0	51.4		
	Microingredients:				
283301	Vitamins	(X)	162.0	(NA)	(NA)
283302	Drugs and antibiotics	(X)	246.1	(NA)	(NA)
283304	Other, including trace minerals	(X)	226.0	(NA)	(NA)
190003	Flexible packaging materials	(X)	-	(NA)	(NA)
239305	Textile bags (including burlap, cotton, polypropylene, etc.) — mil bags	220.2	17.8	(NA)	(NA)
267420	Paper shipping sacks — mil sacks	1 680.2	72.7	(NA)	(NA)
265001	Paperboard, containers, boxes, and corrugated paperboard	(X)	5.7	(NA)	(NA)
340001	Metal containers	(X)	1.8	(NA)	(NA)
970099	All other materials, ingredients, containers, and supplies	(X)	464.9	(NA)	(NA)
971000	Materials, ingredients, containers, and supplies, n.s.k.[2]	(X)	2 190.1	(NA)	(NA)

[1]For some establishments, data have been estimated from central unit values which are based on quantity-cost relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

[2]Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

APPENDIX
Scope and Coverage and Explanation of Terms

GENERAL

The 1987 Census of Manufactures is the 32nd census of manufacturing establishments conducted in the United States. For 1987, it was conducted as part of the economic censuses, which included the censuses of mineral industries, construction industries, retail and wholesale trades, service industries, selected transportation activities, and minority-owned and women-owned businesses, under authority of title 13 of the United States Code. Title 13 specifies that an economic census be conducted every 5 years to cover years ending in 2 and 7.

SCOPE AND COVERAGE

Establishment Basis of Reporting

The census of manufactures is conducted on an establishment basis. All manufacturing establishments with one paid employee or more at any time during the year are covered by the census of manufactures. Therefore, a company operating at more than one location is required to file a separate report for each location. This report excludes information for separately operated administrative offices, warehouses, garages, and other auxiliary units which service manufacturing establishments of the same company. Where these auxiliary operations are conducted at the same location as the manufacturing operation, they are usually included in the report for the operating manufacturing establishment.

Use of Administrative Records

From a universe of approximately 350,000 manufacturing establishments in the 1987 Census of Manufactures, approximately 150,000 small single-establishment companies were excused from filing reports. Selection of the small establishment nonmail cases was done on an industry-by-industry basis. A variable cutoff was used to determine those establishments for which administrative records were to be used in place of a census report. The cutoffs were selected so the administrative-record cases would account for approximately 3 percent or less of the value of shipments for the industry. These cutoffs were then adjusted so that all single-establishment companies with less than 5 employees were excluded from the mail canvass, while all establishments with more than 20 employees were included. Where establishments in the 5 to 20 employee size range were included in the mail canvass, an abbreviated census form was frequently used.

For these nonmail establishments, (and a small number of larger establishment whose reports were not received at the time the data were tabulated) data on employment, payroll, and receipts were obtained from administrative records of other government agencies rather than from census forms. The administrative-record information was then used in conjunction with industry averages to estimate the data for these establishments. The value of shipments and cost of materials were not distributed among specific products and materials but were included in the product and material "not specified by kind" (n.s.k.) categories.

EXPLANATION OF TERMS

Number of establishments and companies–A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

All employees–Includes all full-time and part-time employees on the payrolls at any time during the year. Included are all persons on paid sick leave, paid holidays, and paid vacations. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for midmonth payroll periods of March, May, August, and November.

Production workers–Includes workers up through the working-supervisor level engaged in fabricating, processing, assembling, inspecting, receiving, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial, guard services, product development, auxiliary production for plant's own use (e.g., powerplant), recordkeeping, and other closely associated services. Truckdrivers delivering ready-mixed concrete are also included in production workers.

Other employees–Includes nonproduction personnel, including those engaged in the following activities: supervision above working-supervisor level, sales (including driver/salespersons), sales delivery (truckdrivers and helpers), advertising, credit collection, installation and

servicing of own product, clerical and routine office functions, executive, purchasing, finance, legal, personnel (including cafeteria, etc.), professional, and technical employees.

Payroll–Includes the gross earnings for the "employees" defined above, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

Production-worker hours–Covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

Cost of materials–Refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuels consumed, regardless of whether they were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or generating electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

Specific materials consumed (table 3)–In addition to the total cost of materials which every establishment was required to report, information was also collected for most manufacturing industries on the consumption of major materials used in manufacturing. These inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Establishments consuming less than a specified amount (usually $10,000) of a specific material were not requested to report consumption of that material separately. Also, the cost of materials for the small establishments for which administrative records were used was estimated as "not specified by kind" (n.s.k.).

Value of shipments and other receipts–Generally refers to received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair receipts, sale of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishment from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In a few industries, the value of production or value of work completed is used instead of value of shipments. These industries are identified in the introduction and are footnoted in table 1.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, that is, including not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead and profit).

Shipments or production of individual products (table 2)–In the 1987 census, detailed shipment information was collected for approximately 11,000 individual products. These products are identified by a seven-digit code and are grouped into approximately 1,500 classes of products, which in turn are primary to 459 four-digit industries. Data at the five-digit product-class level have been collected each year as part of the annual survey of manufactures. Information at the seven-digit level, collected for many industries in the current industrial reports program, is not included in this table.

Value added by manufacture–This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacturing, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

For those industries where value of production is collected instead of value of shipments (see footnote in table 1), value added is adjusted only for the change in work-in-process inventories between the beginning and end of the year. For those industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

Value added avoids the duplication in the figure for value of shipments which results from the use of products of some establishments as materials by others. Value

added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

Expenditures for new plant and equipment–Establishments in operation and any known plants under construction were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments and (b) new machinery and equipment used for replacement and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expenses. Data for used plant and equipment will be published in the final industry bulletin.

End-of-year inventories–Comprised of (a) finished products; (b) work-in-process; and (c) materials, supplies, fuels, etc. Beginning in 1982, respondents were asked to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior years in which respondents were permitted to value their inventories using any generally accepted accounting method. Therefore, 1982 through 1987 data for inventories are not strictly comparable to prior-year data.

Specialization and coverage ratios–An establishment is classified in a particular industry if its shipments of primary products of the industry exceed in value its shipments of the products of any other single industry. An establishments' shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). The following ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in table 1 and data on product shipments shown in table 2.

Specialization ratio–Represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio–Represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments, wherever classified.